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(IJIREV)**www.gaexcellence.com/ijirev**PARTIAL TRUST REPAIR IN A MANDATORY GREEN
SERVICE: EVIDENCE ON THE SERVICE RECOVERY
PARADOX FROM CHINA'S VEHICLE INSPECTION
INDUSTRY**Xiugen Wang^{1*}, Hong Gong², Basheer Al-haimi³, Xuan Zhao⁴¹Azman Hashim International Business School, Universiti Teknologi Malaysia, Malaysia wangxiugen@graduate.utm.my <https://orcid.org/0009-0003-4496-7002>²College of Business, City University of Hong Kong, Hong Kong SAR, China rhkent1@gmail.com <https://orcid.org/0009-0000-8319-1049>³Azman Hashim International Business School, Universiti Teknologi Malaysia, Malaysia mabasheer@utm.my <https://orcid.org/0000-0001-5660-7977>⁴Baoding Baoheng Motor Vehicle Inspection Co., Ltd, Hebei, China 79480444@qq.com <https://orcid.org/0009-0008-8312-8590>

*Corresponding Author

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Abstract:

Vehicle inspection is a mandatory, compliance-oriented service that vehicle owners cannot easily avoid. This study asks whether recovery in this setting can produce a service recovery paradox, whereby post-recovery trust or satisfaction exceeds the pre-failure level. An embedded case study at BR Company, a Chinese vehicle inspection SME, combined 87 complaint cases, interviews with 10 customers and 5 employees, and participant observation across three insider action-research cycles. Descriptive analysis covered all incidents; exploratory regression used 40 complete cases. Pre-failure trust was retrospectively stated in customer records rather than measured prospectively and may therefore be affected by recall bias. Mean trust declined from a recalled pre-failure baseline of 3.8 to 2.1 after failure and recovered to 3.3. Only 3 cases (3.4%) showed post-recovery satisfaction above the stated pre-failure level. Interactional justice had the strongest association with post-recovery trust ($\beta = 0.45$, $p < .001$), followed by procedural and distributive justice. The findings indicate that mandatory green services may limit the paradox by shifting recovery from extraordinary satisfaction toward damage control. Respectful treatment, transparent procedures, credible remedies, and complaint-led learning are practical capabilities for responsible service governance.

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Keywords:

ESG Governance; Justice Perceptions; Mandatory Green Services; Service Recovery Paradox; Trust Restoration; Vehicle Inspection



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Introduction

Vehicle inspection is a mandatory, compliance-oriented service that vehicle owners encounter as part of regulatory requirements for roadworthiness and emissions. Although stations charge for the service, each encounter also translates public safety and environmental rules into everyday practice. Customers experience those rules through waiting arrangements, technical results, explanations, and frontline conduct. A transparent and respectful encounter can make compliance appear legitimate; a poor one can undermine trust in both the station and the wider inspection system.

This institutional setting changes the service recovery problem. Customers may choose among stations, but they cannot avoid inspection if they wish to drive legally. Continued use therefore does not necessarily indicate restored trust. Limited exit, standardised prices, and the regulatory character of the service may also lead customers to attribute a local failure to the broader inspection system. Recovery must consequently address confidence in the station's competence and integrity as well as confidence in the fairness of inspection procedures.

Service recovery research identifies a service recovery paradox when a customer who experiences a failure followed by highly effective recovery becomes more satisfied or loyal than a comparable customer who experienced no failure or reports a post-recovery evaluation above the pre-failure benchmark (Alenazi, 2021; Lim et al., 2025). The paradox is neither automatic nor general. Failure severity, frequency, controllability, and the quality of interpersonal treatment can all restrict it. In mandatory green services, customers may regard competent recovery as a basic obligation rather than an exceptional favour, making above-baseline outcomes less likely.

This study examines that boundary condition in China's vehicle inspection industry. It treats service recovery as the organisational response to a service failure and uses distributive, procedural, and interactional justice to explain post-recovery trust. Continued patronage is not treated as the primary outcome because customers must undergo inspection. The ESG relevance lies in transparent decisions, fair procedures, respectful treatment, and organisational learning in a service that supports emissions and safety governance.

Accordingly, the central research question is: Can service recovery in mandatory vehicle inspection produce a service recovery paradox, with post-recovery trust or satisfaction exceeding the customer's stated pre-failure level? Three subsidiary questions guide the analysis:

1. How do recorded service failures and customer attributions affect trust in a mandatory vehicle inspection service?
2. How do recovery strategies and the three dimensions of justice relate to post-recovery trust?
3. Does recovery raise trust or satisfaction above the stated pre-failure level, or does it primarily offset the damage caused by failure?

The study reports one main finding and two supporting contributions. Recovery restored a substantial share of lost trust, but post-recovery trust remained below the retrospectively stated pre-failure level and paradoxical outcomes were rare. Justice perceptions helped explain uneven recovery, with interactional justice showing the strongest association in the complete-case analysis. The complaint evidence also supports an action agenda for responsible service management. These conclusions remain bounded by a single case, an exploratory design, and the absence of directly measured environmental outcomes.

Literature Review

Service Recovery and the Recovery Paradox

A service failure occurs when service performance falls below the customer's expectations (Tran, 2024). Service recovery comprises the provider's subsequent efforts to acknowledge the problem, explain its cause, offer a remedy, and take corrective action (Zaid et al., 2021). Technical correction and relational repair are distinct: a vehicle can be retested, for example, while the customer's concern about an opaque or disrespectful process remains unresolved.

The service recovery paradox is the stronger claim that customers who experience a failure followed by highly effective recovery may become more satisfied or loyal than customers who experienced no failure or may evaluate the provider more favourably than they did before the failure (Alenazi, 2021; Lim et al., 2025). Demonstrating the paradox therefore requires an explicit no-failure or pre-failure benchmark. Without that benchmark, ordinary recovery can be mistaken for a paradox. Moreover, severe, repeated, or preventable failures may leave lasting damage that even an excellent response cannot erase (Lunardo et al., 2023; Sidhu et al., 2023; Wardley, 2022).

Recovery Strategies Address Different Types of Damage. An apology recognises the harm and restores dignity; an explanation addresses uncertainty and attribution; compensation responds to material loss; and visible corrective action signals that the provider has learned (von Janda et al., 2021; Nelson & Brown, 2024). Not all of them are suitable for all situations. The problem of mandatory service is even worse; if the customer feels that recovery is their responsibility, then even a good response will be unsatisfactory.

Justice as a Recovery Mechanism

Justice theory helps explain the different views customers hold on the same remedy. Distributive justice refers to the fairness of the results, such as a refund, first-in-first-out service, or a free re-inspection. Procedural justice refers to the path that leads to the desired results: speed, accessibility, consistency, voice and transparency. Interactional justice refers to the treatment customers receive at the time of decision-making and service provision (Ali et al., 2023; Chapagain et al., 2025). Together, the above reasons constitute a sense of fairness in the recovery process.

Compensation is generally the first part, but it does not cover all the recovery costs. Even if there is a reasonable material remedy, it may be ineffective if the complaint procedure is unreasonable or if the customer has not been consulted (Honora et al., 2023). At the same time, an open-process can make a less-than-ideal result more understandable by giving the customer a voice and providing a reasonable explanation (Sidhu et al., 2023). At the level of technical services, people often cannot determine the reasons for a car's passing or failure on their own. Interactional justice provides a type of evidence. Politeness, empathy and an honest acceptance of responsibility all indicate that the organisation views customers as individuals rather than as case numbers (Jeanpert et al., 2021; Radu et al., 2023). Limited Exit may increase that signal. When customers cannot avoid the basic services provided, polite behaviour is often the only immediate sign that the service provider will not be unreasonable.

Therefore, the three dimensions should be seen as working together to some extent rather than being independent. Outcomes are what was distributed; procedures explain how this decision was made; interactions show how customers were served. The other is whether they are related to the post-recovery sense of trust.

Trust Repair under Constrained Choice

A service failure is a deviation from the norm; thus, its repair will take a different form. Competence-based violations are due to an inability; integrity-based violations involve dishonesty or a lack of integrity (Nelson et al., 2021). A technical error may initially be perceived as a lack of ability. If the staff fail to report it, deflect responsibility, or refuse to explain, the same incident will be viewed as a lack of honesty.

Trust repair will therefore require both words and deeds. Apologies and explanations can clarify the intention, and refunds, reinspections, investigations, and process changes provide behavioural evidence that the organisation has responded (Nelson & Brown, 2024). Time shapes the way they are read. A remedy suggested after an extended refusal may be more deliberate than sincere.

In a mandatory service, repeat use is not a reliable proxy for loyalty because customers must return. The analysis therefore follows reported trust and satisfaction across the pre-failure, post-failure, and post-recovery sequence rather than treating continued use as evidence of repair.

Mandatory Services and Institutional Trust

Most recovery studies focus on the reasons why consumers are unable to switch brands or reduce consumption at the time. Mandatory service changes the exit option and, therefore,

alters the concept of fairness (Huang et al., 2022). The provider's obligation is not lessened by repeated demands; on the contrary, constrained choice makes procedural accountability more necessary as market exit cannot serve this disciplinary function.

Trust may also extend to other parties involved. Perceived fairness of the regulatory system will affect people's trust in this system (Liu et al., 2021). Thus, an inspection dispute may be viewed as evidence of a particular station, industry or regulatory system. The present data measure customer-level trust and satisfaction, not institutional legitimacy directly, and interview accounts allow for a cautious exploration of the broader implications of that distrust.

ESG Governance and Green Service Innovation

For a public-facing service, ESG is realised in the routines before being reported in metrics. Reliable equipment and credible emissions decisions relate to environmental governance; dignity, accessibility and fair complaint handling relate to social responsibility; transparent procedures and accountable correction relate to governance. Thus, ESG will no longer be regarded as an attribute of general customer service.

Green service innovation refers to the process and changes in digitalisation that can make the inspection more reliable, resource-efficient and user-friendly. A typical application of an appointment system is shown below: queue display, clear result explanation, rapid re-inspection, equipment monitoring and complaint dashboard. The case documents the service problems that led to the above practices and the organisation's recovery learning. It does not record the reduced emissions or environmental benefits achieved.

Theoretical Framework

Figure 1 presents the analytical sequence. A perceived service failure leads to customer attribution and the initiation of a complaint and recovery response. Customers then evaluate distributive, procedural, and interactional justice, which shape post-recovery trust and satisfaction. Governance legitimacy and service innovation are interpreted as downstream implications of accountable recovery rather than as directly estimated outcomes.

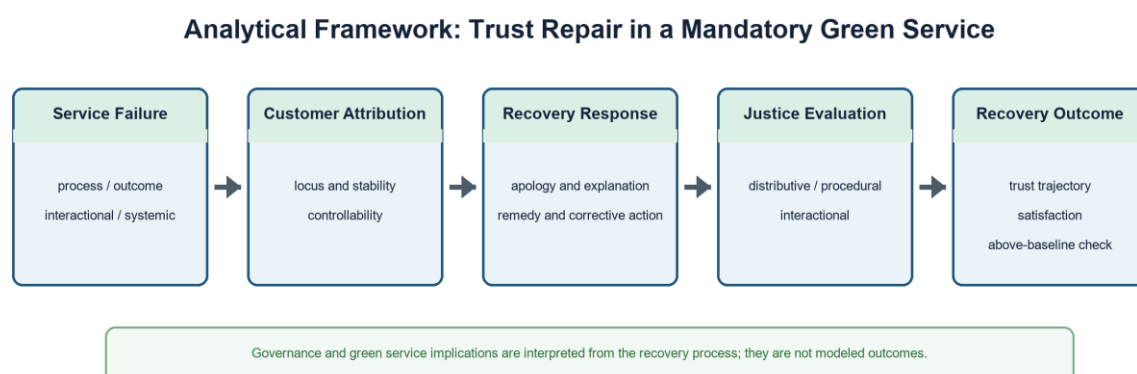


Figure 1: Analytical Framework for Service Recovery and Trust Restoration in a Mandatory Service.

Source: Developed by the authors

The analysis considers four expectations:

- Expectation 1: A reasonable remedy or tangible corrective measure will be associated with higher post-recovery trust through distributive justice.
 - Expectation 2: Prompt, accessible, and transparent complaint and reinspection procedures will be associated with higher post-recovery trust through procedural justice.
 - Expectation 3: Empathy, respect, and sincere acknowledgement will be associated with higher post-recovery trust through interactional justice.
 - Expectation 4: In a mandatory service, recovery will generally restore only part of the trust lost after failure and will rarely produce evaluations above the stated pre-failure baseline.
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- Stage 1, service failure, identifies what went wrong and how severe or frequent the breakdown was. The four empirical categories are process, outcome, interactional, and systemic failure.
 - Stage 2: Customer Attribution refers to how people perceive the reasons for behaviour. Judgments of locus, stability and controllability determine whether a fault is viewed as an isolated error or as a manifestation of a more serious underlying defect (Weiner, 2000).
 - Stage 3, complaint and recovery initiation, captures the provider's response, which may include an apology, explanation, compensation, reinspection, priority service, investigation, and a commitment to prevention. The credibility of the response depends on how well it addresses the failure.
 - Stage 4 concerns the customer's justice perceptions. Distributive, procedural, and interactional judgements capture the fairness of the outcome, the process, and the interpersonal treatment provided during recovery.
 - Stage 5 considers post-recovery trust, satisfaction, and behavioural intentions. These evaluations are compared with the stated pre-failure baseline to distinguish partial repair from a possible recovery paradox.

Research Methodology

Research Design and Case Context

The study used an embedded single-case design with multiple sources of evidence and the Critical Incident Technique (CIT). CIT is suitable for consequential service encounters because it preserves the sequence of events, organisational responses, and customer outcomes rather than reducing the experience to a single overall score (Flanagan, 1954). Complaint records formed the incident corpus, interviews and field notes supported interpretation, and descriptive measures and exploratory regression were used to examine patterns in the coded records.

A bounded insider action-research orientation complemented the case study. Across three rounds, the researcher helped diagnose recurring problems from complaint and observation records, supported management reflection on recovery routines and staff or process adjustments, and reviewed subsequent evidence from records, interviews, and field notes. This role involved observation, facilitation, and documentation during normal management operations; it did not constitute a controlled intervention.

Fieldwork was conducted from July to December 2025 at one SME vehicle inspection station in Baoding, Hebei Province. The organisation is identified only by the pseudonym BR Company. The single case enables analysis of process and meaning but is not statistically representative of China's vehicle inspection industry; it is used to examine a mechanism under constrained choice rather than to estimate sector-wide prevalence.

Data Collection

Four sources were combined. Each had an independent purpose for analysis, and then convergence among the sources was used to enhance the interpretation.

Customer complaint records provided the incident population. During the six-month study period, 87 complaints documented service failures, delayed or absent responses, slow recovery, or unresolved problems. These records supported the failure typology, recovery-strategy frequencies, recovery-success classifications, and available trust comparisons. Trust was recorded on a five-point scale where ratings were available. The pre-failure score was stated retrospectively by customers in the available records and was not collected prospectively before each incident; post-failure and post-recovery ratings were taken from the corresponding case records.

Ten customers who had recently experienced failure and recovery were purposively selected to cover different failure types and severity levels. The semi-structured interviews lasted 30-45 minutes, were recorded and transcribed, and were analysed for attribution, emotion, justice perceptions, and trust. They provided interpretive depth rather than statistical representativeness.

Five employees were interviewed: two frontline staff involved in service delivery and complaint handling, and three managers responsible for recovery decisions. Their accounts clarified operational constraints, escalation options, and staff interpretations of customer feedback.

Participant observation and field notes recorded customer-employee interactions and internal meetings on failures and recovery. As the lead researcher was also in a management position, these materials provided access to the production process but also created an insider bias risk. Triangulation and the explicit division of observation from interpretation were employed to manage, but not eliminate, this risk.

Data Analysis

The analysis comprised five linked stages. NVivo was used for qualitative coding, and complaint records were also summarised descriptively.

First, all 87 incidents were classified by primary failure type and severity to produce the descriptive inventory reported in Table 1.

Second, customer and employee transcripts were open coded for attribution, emotion, recovery evaluation, and trust. Initial codes were developed through repeated reading rather than imposed from the analytical framework.

Third, the material was re-coded according to the analytical constructs of distributive, procedural and interactional justice; competence- and integrity-related trust violation; and verbal or behavioural repair. This framework-based pass enabled comparison of incidents and retained contextual notes.

Fourth, descriptive statistics were calculated for failure frequency, recovery category, and the available pre-failure, post-failure, and post-recovery ratings. The pre-failure value is a retrospectively stated baseline, not a prospective measurement, so the trust trajectory is interpreted descriptively and may be affected by recall or hindsight bias. Satisfaction was used only as a secondary indicator of above-baseline recovery because trust and satisfaction are related but not interchangeable. The exploratory regression was restricted to the 40 cases with both a post-recovery trust rating and complete coding for all three justice dimensions; the other 47 cases remained in the descriptive and qualitative analyses. The regression examined associations rather than causal effects.

Finally, complaint records, customer interviews, employee accounts, and field notes were compared incident by incident where possible. Divergence was treated as an analytical signal rather than automatically resolved, allowing the study to summarise what went wrong, how it was perceived, and how far trust was restored in this case.

Findings

The findings are presented in the sequence of the recovery process: failure patterns, customer attribution, response credibility, justice associations, and the degree of trust restoration.

Failure Patterns and Governance Risks

BR Company had 87 complaint cases in the observation period. Process failures were the largest group, but frequency and damage were not the same; outcome and interactional failures often had more serious consequences for competence, integrity and dignity (Table 1).

Table 1: Service failure typology and corresponding governance risks (N = 87)

Failure Type	Frequency	Percentage	Most Common Examples	Primary ESG Service Risk
Process Failure	38	43.7%	Excessive waiting time; confusing instructions; repeat queuing	Operational inefficiency and wasted customer time
Outcome Failure	21	24.1%	Incorrect/unfair inspection result; billing errors	Damaged credibility of emissions/safety decisions
Interactional Failure	18	20.7%	Rude or indifferent staff; lack of communication	Weak social responsibility and dignity in service

Failure Type	Frequency	Percentage	Most Common Examples	Primary ESG Service Risk
Systemic Failure	10	11.5%	Equipment malfunction; data system crash	Digital/equipment governance weakness
Total	87	100%		

Source: Authors' analysis based on study data

Process failures accounted for 38 of the total 43.7%. The long wait, repeated queuing and no clear indication of the situation all made the customers feel that their trip was pointless. A customer said that he has to be here, but his time is not respected. I waited for two hours for a 15-minute inspection. The complaint was reasonable, but so was the problem of procedures; the customer had no choice but to wait and did not know why there was a delay.

Outcome failures numbered 21 (24.1%) and were often read more seriously. A disputed inspection result or billing error could be viewed as incompetence, bias or dishonesty. As the customer cannot independently verify the technical judgment, the weak explanation of the breach is amplified. The above cases show why the results need to be communicated in the course of recovery.

Interactional failures accounted for 18 cases (20.7%), while systemic failures accounted for 10 (11.5%). Customers distinguished between a technical problem and the manner in which staff responded to it. One customer explained: 'The test failing is one problem. However, the way the employee smirked and said, "It's your problem, not mine," made me feel very embarrassed.' Customers could sometimes tolerate an equipment or data-system fault, but they were less willing to accept silence, disrespect, or blame shifting.

Attribution under Constrained Choice

Approximately three-quarters of the ten interviewed customers attributed the failure to factors within the company's control and therefore open to management action. A long queue was seldom viewed as an isolated staff shortage; it was more often interpreted as disregard for customers' time. Disputed results could also lead customers to question the wider inspection system. Although these interviews do not represent all customers, they show that recovery at BR Company often began with little benefit of the doubt.

Recovery Credibility: Words, Remedies, and Corrective Action

BR Company has used combinations of apologies, explanations, compensation, priority service, re-inspections and promises to improve. The distinguishing factor was not only the form of the reply but also whether it was perfunctory; a responsible party provided a feasible solution and demonstrated preventative measures.

Apologies appeared in many records, but customers responded differently to their quality and source. A routine 'sorry for the wait' could sound scripted, whereas a manager's direct

acknowledgement of fault signalled that the problem had been taken seriously. Interactional repair began with tone but gained credibility through ownership.

Explanations appeared in about 65% of the cases. They were useful when they clarified the cause, consequences, and next steps. They failed when they merely shifted blame, as in 'the government system is slow today.' Even when factually correct, such statements left customers without a remedy or a clear path to resolution.

Compensation occurred in 45% of the cases and included priority service, refunds, and free reinspections. Its meaning depended on the surrounding process. A free retest without explanation could be viewed as an attempt to close the case quietly; the same remedy became more credible when it followed an investigation and clear communication of the result. Table 2 summarises the observed recovery combinations.

Table 2: Observed Recovery Combinations and Evidence-informed Service Implications

Failure Type	Observed Recovery Combination	Observed Response and Evidence-Informed Implication
Process Failure	Apology + Explanation + Priority Service	The response acknowledged time loss, explained the cause, and expedited the customer; recurrence indicates a need for queue-process review.
Outcome Failure	High-Level Apology + Full Refund/Free Re-test + Investigation	The response provided a re-test or refund and an investigation; credibility depended on a traceable explanation of the result.
Interactional Failure	Sincere Apology from Manager + Empathy	A manager apology and empathy addressed customer dignity; the pattern supports follow-up communication and accountability training.
Systemic Failure	Apology + Transparent Explanation + Compensation	The response explained the technical issue and compensated inconvenience; repeated faults would justify equipment or system reliability review.

Source: Authors' analysis based on study data

Justice Associations in the Complete-Case Subset

The qualitative evidence and coded records both indicated that customers evaluated not only what recovery provided but also how it was delivered. The regression offers an exploratory comparison of the three justice dimensions and is not a causal test.

The 40 cases with complete justice-dimension coding and a post-recovery trust rating were analysed. Interactional justice showed the largest standardised association with trust ($\beta = 0.45$, $p < .001$), followed by procedural justice ($\beta = 0.28$, $p < .01$) and distributive justice ($\beta = 0.18$, $p < .05$). The other 47 cases were not included in this regression and should not be regarded as missing support for the same model.

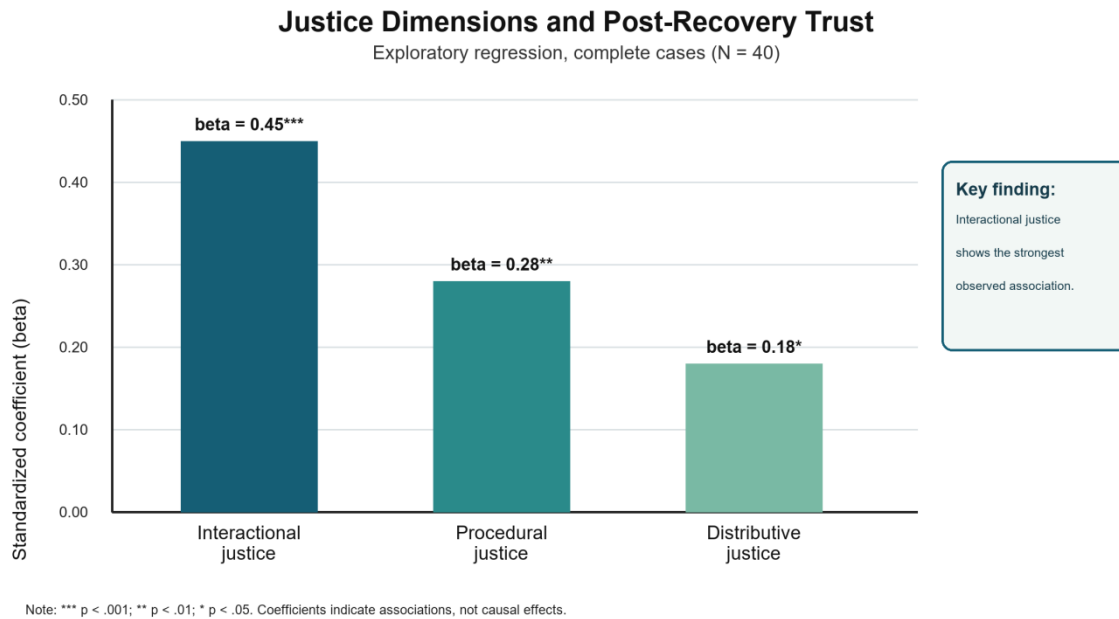


Figure 2: Standardised Associations between Justice Dimensions and Post-Recovery Trust (N=40).

Source: Authors' analysis based on study data

This ordering is consistent with the interview evidence. Customers repeatedly emphasised respectful treatment and a clear acceptance of responsibility. The result does not establish that interactional justice caused higher trust, but it suggests that a remedy delivered without dignity or ownership may not be regarded as legitimate.

Partial Trust Restoration and a Rare Recovery Paradox

Recovery repaired a substantial share of the initial trust loss but did not restore the retrospectively stated baseline. Mean recalled pre-failure trust was 3.8, fell to 2.1 after failure, and increased to 3.3 after recovery. Post-recovery trust therefore reached 87% of the stated pre-failure value (Table 3). Because the 3.8 baseline was reconstructed from customers' retrospective statements in the available records rather than measured before each incident, the trajectory may be affected by recall or hindsight bias and should be interpreted descriptively.

Table 3: Trust Trajectory and Recovery Outcomes

Metric	Pre-Failure	Post-Failure (Pre-Recovery)	Post-Recovery
Average Trust Score (1-5)	3.8	2.1	3.3
Trust Level vs. Pre-Failure	100%	55%	87%
Recovery Success Rate	-	-	34%

Source: Authors' analysis based on study data

Recovery success refers to cases in which post-recovery trust reached at least 90% of the customer's retrospectively stated pre-failure level.

Only 3 of the 87 cases (3.4%) recorded post-recovery satisfaction above the customer's stated pre-failure level. Trust and satisfaction are related but distinct constructs, so this comparison does not constitute a definitive paradox test. It nevertheless shows that above-baseline outcomes were rare in the recorded cases. One customer explained that, although the problem had been corrected, the incident had exposed a deeper weakness in the system: 'I will be back next year because I have to, not because I trust them.'

Thirty cases met the criteria for the study as successfully operated. The successful cases generally had a quick response, respected the other party, had a clear process, and provided a tangible remedy or correction. In short, recovery at BR Company mainly served as damage limitation. The data are in line with mandatory service being a boundary condition for the recovery paradox, but they do not show that compulsion alone led to this pattern.

Discussion

The main finding is that, in this case of mandatory vehicle inspection, recovery restored part of the trust lost after failure but rarely produced an evaluation above the stated pre-failure level. Customers expected fair rectification, transparent procedures, and respectful conduct, yet generally viewed these responses as organisational duties rather than exceptional benefits. The service recovery paradox was therefore rare, while justice perceptions helped explain why some cases recovered more strongly than others.

A Boundary Condition and Its Explanatory Mechanism

The case supports a boundary proposition. Most service recovery paradox research concerns discretionary settings, where an outstanding response may create contrast, gratitude, or renewed loyalty. Mandatory inspection changes that comparison: customers must use the service and expect the provider to act competently and fairly. A good response may therefore be considered acceptable without being remarkable. The recalled 3.8-2.1-3.3 trust trajectory and the three above-baseline cases among 87 incidents are consistent with this interpretation. Mandatory use does not eliminate the recovery problem, nor does this single case establish a universal boundary condition. The pre-failure benchmark was reconstructed retrospectively from available records, and the above-baseline comparison used satisfaction as a secondary indicator rather than as a substitute for trust. These limitations require caution. Mandatory green services should be investigated as a potentially distinct context rather than assumed to follow patterns established in retail or hospitality.

Justice theory explains the changes within that limit. Interactional justice had the strongest observed association with post-recovery trust in the 40 complete cases, and customer narratives frequently mentioned dignity. Procedural and Distributive Justice Still Mattered. Respectful communication without a credible re-inspection, refund, explanation or investigation would be empty words. The mode is configuration: people read, process and solve problems simultaneously.

ESG contributions are thus a result of the mechanism and not measured environmental outcomes. Vehicle inspections aim to promote emission and safety policies, and therefore, fairness in their implementation will affect people's perceptions of these policies. Complaint records can show where the operating accountability fails. These records inform the redesign of the queue, communicate the results, conduct equipment checks, and have staff reflections,

thus making recovery a form of responsible service learning. The present case has identified a path; further research will examine the environmental and institutional effects of this path.

Evidence-Informed Action Agenda

Five management actions follow from the case evidence. They are recommendations rather than tested interventions, and their environmental effects were not measured in this study.

First, enhance the openness of emission and safety information. The failure of the outcome damaged trust because customers could not know how that result was achieved. Present the relevant criteria, thresholds, evidence paths, correction options and retest routes for vehicle owners at the station in an understandable way.

Second, address waiting as a problem of procedural justice. The highest proportion of problems were process failures. Appointments are a visible queue status; otherwise, work will be unevenly distributed and delays will occur.

Third, design reinspection as guided compliance rather than simple compensation. A free or preferential retest will be more convincing if the customer is also informed of the particular problems to be corrected and the reasons for it. Together, the two will serve the station's ecological and safety needs.

Fourth, train for recognition, explanation and escalation. Employees need words to acknowledge an error without having to invent a reason, and they need the power to escalate serious cases to their manager promptly. Regression analysis and interviews have both found interactional behaviour to be highly practical.

Fifth, employ complaint data for governance visualisation. Log the type of failure, severity, response, recurrence and trust results for the manager, and then review clusters in action-research cycles. The dashboard should not be shown as an ESG index in isolation. It shows the places where the responsible service routines need attention and whether corrective measures have reduced recurrence.

Limitations and Future Research

Several limitations restrict the scope of the findings. The study concerns one SME station, and the 87 incidents are logged complaints rather than a probability sample. The interview evidence comes from 10 customers and 5 employees. Pre-failure trust was reconstructed retrospectively from stated baselines rather than measured prospectively, creating possible recall and hindsight bias; trust and satisfaction were also not treated as interchangeable indicators. Only 40 complete cases entered the exploratory regression, and the available evidence does not include the diagnostics needed for stronger statistical inference. The lead researcher's management role increased access but may have influenced observation and interpretation. Finally, ESG legitimacy, compliance behaviour, emissions outcomes, and the effects of proposed digital or process innovations were not directly measured. Future multi-station research should use prospective trust measures, fuller model diagnostics, and cycle-specific action-research outcomes.

Conclusion

This study asked whether service recovery in mandatory vehicle inspection can restore customer trust beyond its pre-failure level. Evidence from 87 complaint cases, 15 interviews, field observations, and a 40-case exploratory regression indicates that service failures produced substantial trust loss at BR Company, recovery restored much of that loss, and above-baseline outcomes were rare. Because the pre-failure benchmark was stated retrospectively, this conclusion concerns a descriptive pattern rather than a prospective before-and-after effect.

The pattern is consistent with customers viewing competent recovery as a basic responsibility of the inspection provider rather than an additional benefit. Fair remedies and transparent procedures were expected, while interactional justice had the strongest observed association with post-recovery trust. Respectful treatment made corrective action appear more legitimate, but it could not substitute for a credible remedy.

Vehicle inspection managers should treat recovery as a governance function: communicate results transparently, make queues visible, guide reinspection, hold frontline staff accountable for conduct, and learn systematically from complaints. These practices may protect trust in a service that implements emissions and safety requirements, although their effects on institutional legitimacy and environmental performance were not measured here. The supported conclusion is therefore practical and bounded: in this mandatory green service, recovery primarily limited damage to trust rather than generating a service recovery paradox.

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References

- Alenazi, S. (2021). Determinants of Pre-Service Failure Satisfaction and Post-Service Recovery Satisfaction and their Impact on Repurchase and Word-of-Mouth Intentions. *QUALITY-ACCESS TO SUCCESS*, 22(182), 88-94.
- Ali, F., El-Manstrly, D., & Abbasi, G. (2023). Would you forgive me? From perceived justice and complaint handling to customer forgiveness and brand credibility-symmetrical and asymmetrical perspectives. *Journal of Business Research*, 166, 114084. <https://doi.org/10.1016/j.jbusres.2023.114084>
- Chapagain, R., Saud, H., Dhungana, B., & Kumar, R. (2025). Customer loyalty in the hotel industry: the interplay of justice perceptions and satisfaction as a mediator: evidence from Nepal. *Cogent Business & Management*, 12(1), 2445893. <https://doi.org/10.1080/23311975.2025.2445893>
- Flanagan, J. C. (1954). The critical incident technique. *Psychological Bulletin*, 51(4), 327-358.
- Honora, A., Chih, W., & Ortiz, J. (2023). What drives customer engagement after a service failure? The moderating role of customer trust. *International Journal of Consumer Studies*, 47(5), 1714-1732. <https://doi.org/10.1111/ijcs.12918>
- Huang, Y., Fang, X., & Liu, R. (2022). Necessary evil: a strategy to manage dysfunctional customer behavior. *Journal of Services Marketing*, 36(5), 741-753. <https://doi.org/10.1108/JSM-04-2021-0128>
- Jeanpert, S., Jacquemier-Paquin, L., & Claye-Puaux, S. (2021). The role of human interaction in complaint handling. *Journal of Retailing and Consumer Services*, 62, 102631. <https://doi.org/10.1016/j.jretconser.2021.102631>
- Lim, W. M., Saha, V., & Das, M. (2025). From service failure to brand loyalty: evidence of service recovery paradox. *Journal of Brand Management*, 32(4), 257-281. <https://doi.org/10.1057/s41262-024-00363-z>
- Liu, Y., Cheng, P., & Ouyang, Z. (2021). How trust mediate the effects of perceived justice on loyalty: A study in the context of automotive recall in China. *Journal of Retailing and Consumer Services*, 58, 102288. <https://doi.org/10.1016/j.jretconser.2020.102288>
- Lunardo, R., Cusin, J., & Flacandji, M. (2023). A time(ly) perspective of the service recovery paradox: How organizational learning moderates follow-up recovery effects. *Journal of Business Research*, 166, 114079. <https://doi.org/10.1016/j.jbusres.2023.114079>
- Nelson, C., & Brown, J. (2024). Actions speak louder than words: The adaptive use of behavioral repair strategies on trust recovery. *Industrial Marketing Management*, 122, 89-105. <https://doi.org/10.1016/j.indmarman.2024.08.007>
- Nelson, C., Cui, A. P., & Walsh, M. F. (2021). Breach of trust and repair: the impact of salespersons' words and actions on buyer trust. *Qualitative Market Research: An International Journal*, 24(3), 375-395. <https://doi.org/10.1108/QMR-01-2020-0008>
- Radu, A., Quach, S., Thaichon, P., Surachartkumtonkun, J., & Weaven, S. (2023). Relationship outcomes following a service failure: the role of agent likability. *Asia Pacific Journal of Marketing and Logistics*, 35(2), 364-379. <https://doi.org/10.1108/APJML-01-2022-0055>
- Sidhu, S., Ong, F. S., & Balaji, M. S. (2023). Impact of failure severity levels on satisfaction and behavior: from the perspectives of justice theory and regulatory focus theory. *Journal of Consumer Marketing*, 40(4), 535-547. <https://doi.org/10.1108/JCM-04-2022-5320>
- Tran, V. T. (2024). Service failure recovery on customer recovery satisfaction and attitude loyalty for airline industry: the moderating effect of brand authenticity. *Cogent Business & Management*, 11(1), 2311656. <https://doi.org/10.1080/23311975.2024.2311656>

- von Janda, S., Polthier, A., & Kuester, S. (2021). Do they see the signs? Organizational response behavior to customer complaint messages. *Journal of Business Research*, 137, 116-127. <https://doi.org/10.1016/j.jbusres.2021.08.026>
- Wardley, M. (2022). Service recovery in unaffected consumers: evidence of a recovery paradox. *International Journal of Quality and Service Sciences*, 14(1), 121-132. <https://doi.org/10.1108/IJQSS-01-2021-0010>
- Weiner, B. (2000). Attributional thoughts about consumer behavior. *Journal of Consumer Research*, 27(3), 382-387. <https://doi.org/10.1086/314315>
- Zaid, S., Palilati, A., Madjid, R., & Bua, H. (2021). Impact of Service Recovery, Customer Satisfaction, and Corporate Image on Customer Loyalty. *Journal of Asian Finance, Economics and Business*, 8(1), 961-970. <https://doi.org/10.13106/jafeb.2021.vol8.no1.961>